VOLUME 24 · NUMBER 10 · APRIL 1 2006

JOURNAL OF CLINICAL ONCOLOGY

THE ART OF ONCOLOGY:
When the Tumor Is Not the Target

Deliberate Deceit of Family Members: A Challenge to Providers of Clinical Genetics Services

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Submitted May 10, 2005; accepted October 26, 2005.

Authors' disclosures of potential conflicts of interest and author contributions are found at the end of this article.

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0732-183X/06/2410-1643/$20.00

DOI: 10.1200/JCO.2005.02.6203

HERE'S THE CASE

The proband was a 55-year-old white female who sought pretest counseling when she learned that her father was a *BRCA1* mutation carrier. Her father is 85 years old, in good health, and is a brother of a woman who died as a result of ovarian cancer at the age of 35. He learned his mutation status as a participant in a National Cancer Institute research study of familial breast and ovarian cancer. He encouraged all of his children to enroll onto the study and to consider testing. The proband and her siblings (two sisters ages 40 and 48, and a brother age 38, all unaffected) decided to obtain pretest counseling and consider genetic testing.

During pretest counseling, the proband revealed her preference that information related to a positive mutation test, in either herself or her siblings, be withheld from her parents. Her rationale was to protect her father from the guilt of having passed a mutation on to an offspring. She stated that her test results "were her own," and that she would not disclose results to her relatives, whether she tested negative or positive. She also indicated that she would attempt to influence how her siblings communicated their personal test results within the family, by encouraging them to withhold their results, should they learn that they were mutation carriers.

All four siblings chose to be tested and their results were disclosed in individual sessions on the same day. The proband, one sister, and her brother had the same mutation that had been identified in their father; the other sister tested negative. The proband was assured that the research team would preserve the confidentiality of her information. She stated that she clearly understood the implications of her test results for her children, that she would "take care of them," promising that they would be informed of the test results when it "was appropriate." The proband's siblings shared their mutation results with family members in the waiting room following their disclosure session. However, in the presence of several members of the research team, the proband lied to her family members about her test results, informing her family that she had tested negative for the *BRCA1* mutation.

THE ETHICAL DILEMMA

This was the first time that our research team had encountered this ethical dilemma. The central conflict was between the duty to maintain the proband's confidentiality and the duty to disclose clinically valuable information to at-risk relatives. Furthermore, the proband's deceit had resulted in false reassurance regarding her children's risk, which could be viewed as increasing the team's duty to make certain that the family was informed of the actual risk. The team was disturbed at having been made complicit in the proband's lie, because this goes against core personal and professional values of truthfulness.

The heart of the dilemma lay in how to ensure that the proband's children received the information that they needed to take proper care of themselves. In particular, the oldest daughter was approaching age 25, the time at which it is generally recommended that breast and ovarian cancer screening begin among female mutation carriers[1]; early-onset breast cancer was part of this family's history.

Several research team members believed that the potential benefits to the 23-year-old daughter should outweigh the wishes of her mother; they favored offering her genetic counseling so that she could make her own decision about testing. This course of action would comprise a de facto disclosure of the mother's mutation status, given that the only circumstance under which such a recommendation would be offered was one in which the mother was known to have a mutation. This position was justified by arguing that by not offering her the opportunity to learn her own mutation status, the daughter would not have the opportunity to attempt to modify her risk of breast and ovarian cancer—both potentially lethal events. Other research team members believed that the proband's confidentiality took priority, and that the research team could not breach the agreement with her, even to accomplish a goal that most would regard as

worthwhile. These conflicting views led the team to request an ethics consultation from the Ethics Sub-Committee of the National Society of Genetic Counselors. After additional discussion by the research team, a consult from the Bioethics Consultation Service from the Clinical Center of the National Institutes of Health was requested aimed at mediating the ethical and legal issues. Three fundamental issues arose as a result of the ethics consultations.

Issue 1: What Is the Standard Clinical Approach to BRCA *Testing, Counseling, and Management?*

BRCA *susceptibility testing and cancer risk management.* In the mid-1990s, the autosomal dominant cancer susceptibility genes, *BRCA1* and *BRCA2*, were identified.[2,3] Most mutations are highly penetrant: the cumulative risk of breast cancer in female *BRCA1* mutation carriers is estimated to be between 56% and 87% by age 70; the corresponding figures for ovarian cancer are 16% to 63%.[3-7] Early onset of breast cancer is one of the hallmarks of this syndrome. Approximately 50% of the excess cancers develop by age 50.[4,7,8]

Clinical genetic testing soon followed the cloning of these genes, and many affected individuals and their family members have been referred for genetic counseling and evaluation for *BRCA* testing.[9] As individual family members learn their mutation status, the implications of this new information become apparent for their immediate blood relatives, some of whom will be found to lack genetic cancer susceptibility, whereas others are identified as being at high genetic risk. The influence of this information, and its potential impact on health care decision making, is readily apparent.

Current risk management strategies for a woman with a *BRCA* mutation neither completely eliminate the risk of breast or ovarian cancer, nor have been proven to improve survival, but they are generally accepted as conferring substantial benefit, nonetheless.[10] Prophylactic removal of the breasts and/or ovaries and fallopian tubes seems to offer the largest reduction in cancer risk.[10] Recent data also suggest that the addition of magnetic resonance imaging of the breasts improves the sensitivity of breast screening.[11,12] Other measures provide less certain benefit; these include the use of tamoxifen for breast cancer prevention in *BRCA1/2* mutation carriers,[13,14] and the use of oral contraceptives for the chemoprevention of ovarian cancer.[15-18]

Genetic counseling and communication of test results. Genetic counseling places a high value on the sensitivity of the information obtained from an individual and family members. It is standard practice to assure individuals being counseled that the information they provide will be kept in confidence, and will not be disclosed without their authorization. However, it is common for genetics clinicians to work with multiple members of the same family—a situation that necessitates careful attention to who within a family is permitted to know what about whom. Although they are committed to protecting each individual's privacy, clinicians also routinely stress the value of sharing genetic information with close family members who might use this knowledge to inform their own health care decisions.[19] This discussion must balance the individual's right to privacy and to keep their personal medical information confidential with the potential benefit of sharing genetic testing results with other family members.[20,21] When an individual chooses not to share a test result with family members, and other family members know that testing has occurred, the relatives are still free to consider genetic testing on their own. This is especially true in families in which there is an affected family member with a known deleterious mutation, as in the present case. However, when false information is conveyed to the family by an individual who has undergone testing, the potential for harm to other family members, especially the children of such an individual, is substantially greater.

Voluntary disclosure of *BRCA1/2* mutation test results to close family members appears to be common (63% to 97%) but not universal.[22-25] *BRCA1/2* mutation carriers shared results more frequently than either those with true negative results or those with mutations of uncertain significance (83%, 76%, and 65%, respectively). Mutation carriers also reported more difficulty and distress related to the communication of their test results to family members than did those who were negative.[25] No studies have assessed the frequency of disclosure of false information to relatives; however, the proband's actions could be interpreted as a strategy to protect herself from the emotional distress associated with disclosure.

In another study, women at high genetic risk of breast and ovarian cancer were asked if a physician should seek out and inform at-risk family members against the patient's wishes; only 22% concurred.[26] The women who demonstrated the greatest knowledge about *BRCA1/2* were the least likely to believe that physicians should seek out and inform at-risk relatives against the patient's wishes.

In the current case, the proband's children have no incentive to consider genetic testing because the family has been told that the children of a mutation-negative parent cannot, by definition, inherit the family's mutation. However, the proband's oldest daughter has a 50% probability of inheriting a mutation, and she will soon reach the age at which it would be standard-of-care to initiate intensive surveillance for breast and ovarian cancer, if she were known to be mutation positive.[1]

Issue 2: Under What Circumstance Would the Responsibility to the Children Over-Ride the Team's Confidentiality Agreement With the Proband, and Have Those Conditions Been Satisfied in This Case?

Case law and patient confidentiality. In a commentary on the "duty to warn" and genetic information, Offit et al[27] asserted that "health care professionals have a responsibility to encourage, but not to coerce, the sharing of genetic information in families, while respecting the boundaries imposed by the law and by the ethical practice of medicine." Patients' rights to privacy and confidentiality have long been accepted as essential features of ethical medical care. From this perspective, it is a patient's prerogative not to share her test results with family members. However, under certain extraordinary circumstances, clinicians are permitted to breach patient confidentiality, but current legal precedent suggests that such disclosure can be justified only to prevent "imminent harm."[20] As reviewed by Offit et al,[27] current case law on the duty to warn in cases related to cancer susceptibility testing is limited and inconsistent, with different outcomes in the two cases that have been adjudicated.[28,29] In neither case was the possibility considered that at-risk relatives might not desire to know about the genetic risks within the family or in themselves, nor that an affected individual might give falsely reassuring information to relatives. Furthermore, the cancer susceptibility syndromes involved in those two cases both present in childhood, and have established risk-reducing health care options. In contrast, data to support the routine use of cancer screening and prevention options for *BRCA1/2* mutation carriers are only now beginning to emerge.[19]

Federal/state standards and patient confidentiality. The President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research[30,31] and the Health Insurance Portability and Accountability Act (HIPAA; 45 C.F.R. Parts 160,164) expressly prohibit the disclosure of protected health information (including genetic information) against the will of a patient, in the absence of a "serious and imminent threat to the health or safety of a person or the public," and many states have statutes that protect against disclosure of genetic information without patient consent.[32,33]

Professional standards of care and patient confidentiality. The American Society of Clinical Oncology supports the position that physicians and other health care providers should give highest priority to maintaining patient confidentiality surrounding genetic test results.[19] The American Medical Association encourages physicians to "make themselves available to assist patients in communicating with relatives to discuss opportunities for counseling and testing, as appropriate."[34] The American Society of Human Genetics guidelines on patient confidentiality suggest that breaching confidentiality should only be considered if the harm to a relative "is highly likely to occur; is serious, imminent, and foreseeable; the at-risk relative(s) is identifiable; and the disease is either preventable, treatable, or medically accepted standards indicate that early monitoring will reduce the genetic risk."[35]

A consensus was reached to maintain the proband's confidentiality. Because her 23-year-old daughter was too young to begin mutation-related surveillance for breast and ovarian cancer, this standard was not met in this case. In addition, because the daughter was not yet a participant in the study, any independent contact with her would be an explicit violation of the Privacy Rule.[21]

Issue 3: Are There Alternative Approaches for Maintaining Constructive Contact With the Proband, in an Effort to Change Her Decision?

Although it may not be appropriate to break the promise of confidentiality in this case, there may be other approaches to secure the benefits of genetic risk assessment for the daughter. The research team member with the strongest relationship with the proband was encouraged to recontact her to determine how she was coping with her own test results; reiterate the team's discomfort in being party to the deception of her children, which could ultimately lead to their harm; and encourage her, again, to share this information with her daughter.

Approximately 6 months after she received her genetic test results, the proband was contacted, and she reported not receiving much support from family and friends, since they all believed that she had not inherited the mutation. However, she reported no unusual distress. She understood, but was not sympathetic to, the moral dilemma that she had created for the team, and she did not feel compelled to change her position. Protecting her father from the guilt of passing the mutation to her was her primary stated justification for withholding the true test results from family members. The team speculated that she was also protecting herself from the guilt, discomfort, and sadness that she might experience if she disclosed the true test result to her children.

She continued to believe that her daughter was too young to be informed of the positive test result, and that informing her in a "few years" would be sufficient. She emphasized her genuine commitment to the health of all her children, and promised that she would communicate the information to her children "in the near future." She reported that she had already given her personal test results to her primary physician, with instructions to share the information with her children should she die before she had the chance to inform them herself. She was given positive feedback for being a caring mother, and was encouraged to frame revealing the true test results to her children as an act of caring. She admitted that the lie had become a burden, and that she was looking forward to the time when she could share the truth with her daughter.

The proband agreed to periodic contact with the research team, and to allow annual recontact to discuss the status of informing her daughter. The team also informed her that her daughter is eligible for other clinical research studies being conducted. Although the team would not single her daughter out for contact, she could be notified (along with other eligible family members) of new research opportunities. Furthermore, if the daughter independently requested the team to perform *BRCA1* testing, her request would be honored even though the test result might disclose her mother's true mutation status. The proband understood this possibility, and stated that she would deal with the consequences of her daughter's decision to seek independent genetic testing, if the issue should arise.

CASE OUTCOME AND CLINICAL LESSONS

After extensive discussion and consideration of the medical, legal, and ethical issues described above, the research team decided to honor the proband's request that her privacy be protected. The conflict was documented in the medical record, including the concerns that were raised and the rationale for the team's approach. The team embarked on a strategy intended to maintain a working rapport with the proband, including periodic telephone contacts and annual follow-up visits. The team used these contacts to continue the discussion regarding the need for truthful disclosure of her test results to her children, given that there was a window of opportunity related to that issue: the eldest daughter was 2 years away from the age at which intensive cancer screening would ordinarily be initiated. The team hoped that we could capitalize on the proband's stated concerns regarding the long-term health and well-being of her children, and eventually help her to see the value in changing her disclosure plan.

What did we learn from this challenging experience? A number of practical suggestions can be offered to those clinicians who are increasingly likely to see these patients in complex circumstances.

First, a straightforward discussion regarding the expectation of truthfulness in sharing genetic test results with family members during the pretest counseling session might have discouraged this patient from lying to her relatives. We discussed her right not to share her test results with family members and how that decision would affect her relatives' ability to test for the family mutation, but we did not discuss the potential consequences of lying about test results.

Second, if a patient admits his or her intention to lie to relatives about their test results, one could consider warning her not to discuss this information in settings or circumstances that make the clinician complicit in the lie. Prior discussion may help prevent the clinician from being placed in the unpleasant position wherein we found ourselves. With prior warning, we suggest that it is acceptable for a clinician to disagree publicly with the patient. We could have simply stated that "there must be a misunderstanding" or that "we would be happy to review the test results again with you."

Third, our patients' expectation that their privacy will be protected and that their personal medical information will be kept confidential has a strong legal and ethical foundation, one that supersedes all but the most extraordinary and compelling concerns that might lead one to contemplate breaching this trust. Whether the current legal protection of patient confidentiality in relation to family information and the prevention of harm to others will be amended as we enter the genomic era of medicine has yet to be determined. We join with other clinicians and researchers[36] in urging an open and broad discussion about the ethical and legal challenges related to providing care to these patients in complex circumstances.

Finally, if faced with a conundrum like this one, the most practical option may well be tincture of time and patience. Preservation of a good working relationship with the patient is paramount, and opportunities should be sought to revisit the discussion and continue efforts to modify the patient's position toward the desired outcome.

EPILOGUE

We have continued to speak with the proband annually, helping her understand the importance of the genetic information for her children and encouraging her to be truthful with them. During our most recent conversation, approximately 2 years after her own disclosure, she informed us that she shared her true mutations test results with her daughter. We have also heard from other family members that they are aware of the proband's true mutation test results—information that they could learn only from her or someone close to her.

Note: Per local Internal Review Board guidance, the family pedigree was altered to prevent recognition of the family or any of its members.

REFERENCES

1. Burke W, Daly M, Garber J, et al: Recommendations for follow-up care of individuals with an inherited predisposition to cancer: II. BRCA1 and BRCA2. JAMA 277:997-1003, 1997

2. Hall JM, Lee MK, Newman B, et al: Linkage of early-onset familial breast cancer to chromosome 17q21. Science 250:1684-1689, 1990

3. Wooster R, Bignell B, Lancaster J, et al: Localization of a breast cancer susceptibility gene, BRCA2 to chromosome 13q12-13. Science 265:2088-2090, 1994

4. Struewing JP, Hartage P, Wacholder S, et al: The risk of cancer associated with specific mutation of BRCA1 and BRCA2 among Ashkenazi Jews. N Engl J Med 336:1401-1408, 1997

5. Easton DF, Ford D, Bishop DT, et al: Breast Cancer Linkage Consortium: 1995—Breast and ovarian cancer incidence in BRCA1 mutation carriers. Am J Hum Genet 56:265-271, 1995

6. Ford D, Easton DF, Statton M, et al: Breast Cancer Linkage Consortium 1998: Genetic heterogeneity and penetrance analysis of BRCA1/2 genes in breast cancer families. Am J Hum Genet 62:676-698, 1998

7. Whittemore AS, Gong G: Itnyre J: Penetrance and contribution of BRCA 1 mutations in breast cancer and ovarian cancer: Results from three U.S. population-based case-control studies of ovarian cancer. Am J Hum Genet 60:496-504, 1997

8. King MC, Rowel S, Love SM: Inherited breast and ovarian cancer: What are the risks? What are the choices? JAMA 269:1975-1980, 1993

9. U.S. Preventive Services Task Force: Genetic risk assessment and BRCA mutation testing for breast and ovarian cancer susceptibility. Ann Intern Med 143:355-361, 2005

10. Calderon-Margalit R, Paltiel O: Prevention of breast cancer in women who carry BRCA1 or BRCA2 mutations: A critical review of the literature. Int J Cancer 112:357-364, 2004

11. Kriege M, Brekelmans CT, Boetes C, et al: Efficacy of MRI and mammography for breast-cancer screening in women with a familial or genetic predisposition. N Engl J Med 351:427-436, 2004

12. Warner E, Plewes DB, Hill KA, et al: Surveillance of BRCA1 and BRCA2 mutation carriers with magnetic resonance imaging, ultrasound, mammography and clinical breast exam. JAMA 292:1317-1325, 2004

13. King MC, Wieand S, Hale K, et al: Tamoxifen and breast cancer incidence among women with inherited mutation in BRCA1 and BRCA1. JAMA 286:2251-2256, 2001

14. Metcalfe K, Lynch HT, Ghadirian P, et al: Contralateral breast cancer in BRCA1 and BRCA2 mutation carriers. J Clin Oncol 22:2328-2335, 2004

15. Narod SA, Risch H, Moslehi R, et al: Oral contraceptives and the risk of hereditary ovarian cancer. N Engl J Med 339:424-428, 1998

16. Modan B, Hartge P, Hirsh-Yechezkel G, et al: Parity, oral contraceptives, and the risk of ovarian cancer among carriers and noncarriers of a BRCA1 or BRCA2 mutation. N Engl J Med 345:235-240, 2001

17. Whittemore AS, Balise RR, Pharoah PDP, et al: Oral contraceptive use and ovarian cancer risk among carriers of BRCA1 or BRCA2 mutations. Br J Cancer 91:1911-1915, 2004

18. McGuire V, Felberg A, Mills M, et al: Relation of contraceptive and reproductive history to ovarian cancer risk in carriers and noncarriers of BRCA1 gene mutations. Am J Epidemiol 160:613-618, 2004

19. American Society of Clinical Oncology: Policy statement update: Genetic testing for cancer susceptibility. J Clin Oncol 21:2397-2406, 2003

20. Tarasoff v Regents of the University of California, 551 P 2d 334, 17 Cal 3d425 (Cal Sup Ct 1976)

21. United State Department of Health and Human Services: OCR Privacy Brief: Summary of the HIPAA Privacy Rule. http://www.hhs.gov/ocr/privacysummary.pdf

22. Smith KR, Zick CD, Mayer RN, et al: Voluntary disclosure of BRCA 1 mutation test results. Genet Test 6:89-92, 2002

23. Hughes C, Lerman C, Schwartz M, et al: All in the family: Evaluation of the process and content of sisters' communication about BRCA 1 and BRCA 2 genetic test results. Am J Med Genet 107:143-150, 2002

24. Costalas JW, Itzen M, Malick J, et al: Communication of BRCA1 and BRCA2 results to at-risk relatives: A cancer risk assessments program's experience. Am J Med Genet C Semin Med Genet 119C:11-18, 2003

25. Julian-Reynier C, Eisinger F, Chabal F, et al: Disclosure to the family of breast/ovarian cancer genetic test results: Patient's willingness and associated factors. Am J Med Genet 94:13-18, 2000

26. Lehmann LS, Weeks JC, Klar N, et al: Disclosure of familial genetic information: Perceptions of the duty to inform. Am J Med 109:705-711, 2000

27. Offit D, Groeger E, Turner S: The "duty to warn" a patient's family members about hereditary disease risks. JAMA 292:1469-1473, 2004

28. Pate v Threlkel, 661 So 2d 278 (Fla 1995)

29. Safer v Estate of Pack, 677 A2d 1188 (NJ App), appeal denied, 683 A2d 1163 (NJ 1996)

30. President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Biobehavioral Research: Screening and Counseling for Genetic Conditions: The Ethical Social, and Legal Implications of Genetics Screening, Counseling, and Education Programs. Washington, DC, US Government Printing Office, 1998

31. Institute of Medicine Committee on Assessing Genetic Risks.Assessing Genetic Risks: Implications for Health and Social Policy. Washington, DC, National Academy Press, 1994

32. Health Insurance Portability and Accountability Act of 1996: Pub L No. 104-191. http://aspe.hhs.gov/admnsimp/pl104191.htm

33. National Human Genome Research Institute: Policy and Legislation Database. http://www.genome.gov/PolicyEthics/LegDatabase/PubSearchResult.cfm

34. Council on Ethical and Judicial Affairs of the American Medical Association: Opinion #-2.131, "Disclosure of Familial Risk in Genetic Testing," forthcoming in American Medical Association, Code of Medical Ethics: Current Opinions. http://www.ama-assn.org/ama/pub/category/11963.html.

35. American Society of Human Genetics: ASHG Statement: Professional disclosure of familial genetic information—The American Society of Human Genetics Social Issues Subcommittee on Familial Disclosure. Am J Hum Genet 62:474-483, 1998

36. Lucassen A, Parker M: Confidentiality and serious harm in genetics-preserving the confidentiality of one patient and preventing harm to relatives. Eur J Hum Genet 12:93-97, 2004

Authors' Disclosures of Potential Conflicts of Interest

The authors indicated no potential conflicts of interest.